6. VEGETATION COMMUNITY DESCRIPTIONS OF VOYAGEURS NATIONAL PARK

6.1 Bogs

Picea mariana / Ledum groenlandicum / Carex trisperma / Sphagnum spp. Forest (Black Spruce Bog)

COMMON NAME	Black Spruce / Labrador-tea / Three-fruit Sedge / Peatmoss species Forest
SYNONYM	Black Spruce Bog
PHYSIOGNOMIC CLASS	Forest (I)
PHYSIOGNOMIC SUBCLASS	Evergreen forest (I.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar needle-leaved evergreen forest (I.A.8)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (I.A.8.N)
FORMATION	Saturated temperate or subpolar needle-leaved evergreen forest (I.A.8.N.g)
ALLIANCE	PICEA MARIANA SATURATED FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM TERRESTRIAL

RANGE

Voyageurs National Park

This type is found in the Rat Root River peatland area and in the peatland complex between Black Bay and Cranberry Bay.

Globally

This association is found in Maine, Michigan, Minnesota, Manitoba, Ontario, and probably Wisconsin.

ENVIRONMENTAL DESCRIPTION

Voyageurs National Park

The Black Spruce Bog is found in situations removed from ground and surface water inputs and only in the interior of large peatlands. It may occur at the crests of raised bogs and adjacent to water tracks. The substrate is deep, acidic Sphagnum peat which is mineral poor. Hummock and hollow microtopography is moderately to well developed. The water regime is saturated.

Globally

Stands are found most typically on the crests of raised bog landforms in large peatland complexes, as well as in basin bogs, where the peat mat surface is removed from contact with ground and surface water inputs. Sites are poorly drained, with wet, saturated organic substrates. Hummock and hollow microtopography is moderately to well developed. (Sims *et al.* 1989, Minnesota DNR 1993, McCarthy *et al.* 1994, Harris *et al.* 1996).

MOST ABUNDANT SPECIES

Voyageurs National Park

Stratum	Species
Tree canopy	*Picea mariana*
Tall shrub	*Picea mariana*
Short shrub	*Ledum groenlandicum, Chamaedaphne calyculata*
Forb	*Maianthemum trifolium*
Graminoid	*Carex trisperma*
Nonvascular	*Sphagnum* spp.

Globally

Stratum	Species
Tree canopy	*Picea mariana*
Tall shrub	*Picea mariana*
Short shrub	*Ledum groenlandicum, Chamaedaphne calyculata*

Forb	*Maianthemum trifolium*
Graminoid	*Carex trisperma*
Nonvascular	*Sphagnum* spp.

CHARACTERISTIC SPECIES

Voyageurs National Park

Picea mariana, Ledum groenlandicum, Chamaedaphne calyculata, Carex trisperma

Globally

Picea mariana, Ledum groenlandicum, Chamaedaphne calyculata, Carex trisperma

VEGETATION DESCRIPTION

Voyageurs National Park

This community includes both a woodland and a forested phase, so canopy cover is widely variable. *Picea mariana* trees dominate this type and are typically 10-15 m tall in the forested phase and 5-10 m tall in the woodland phase. Scattered *Larix laricina* trees are occasionally present. The canopy, especially in the woodland phase, tends to be uneven aged. Shrub strata are usually absent, though *Picea mariana* saplings may be present at low cover. The dwarf-shrubs *Ledum groenlandicum* and *Chamaedaphne calyculata* are nearly always present, but cover is highly variable, ranging from 20-90%. Other ericaceous shrubs such as *Kalmia polifolia, Andromeda polifolia,* and *Vaccinium oxycoccos* can also be present at low cover. The herbaceous strata is species poor and present at low density, usually less than 40% cover. The most widespread species are *Carex trisperma* and *Maianthemum trifolium*. In some cases, *Carex chordorhiza* or *Carex pauciflora* may take the place of *Carex trisperma*. The herbs *Eriophorum vaginatum, Cornus canadensis, Drosera rotundifolia,* and *Sarracenia purpurea* may also be present at low cover. Sphagnum moss typically covers nearly 100% of the forest floor. The most abundant species are *Sphagnum magellanicum*, *Sphagnum recurvum sensu lato,* and *Sphagnum fuscum*.

Globally

Trees cover at least 25% of the canopy, varying in height from 3 m to over 10 m. *Picea mariana* is often the sole species in the canopy. *Larix laricina* may occasionally occur. The dwarf-shrub layer is dominated by *Ledum groenlandicum* and other ericaceous shrubs, such as *Chamaedaphne calyculata, Vaccinium myrtilloides, Vaccinium oxycoccos, Kalmia polifolia, Gaultheria hispidula*, and *Andromeda polifolia*. *Picea mariana* may also be found in scrub form in this layer. The ground cover consists of a species-poor herb layer, with *Carix trisperma, Eriophorum vaginatum*, and *Maianthemum trifolium* most prevalent. In northern Minnesota, *Carex chordorhiza* or *Carex pauciflora* may take the place of *Carex trisperma* in some stands, and the herbs *Eriophorum vaginatum, Cornus canadensis, Drosera rotundifolia,* and *Sarracenia purpurea* may also be present at low cover (M. Smith personal communication 1999). Moss cover is a *Sphagnum* carpet with patches of feathermoss (especially *Pleurozium schreberi*) and conifer litter beneath the trees. Dominant sphagnum species include *Sphagnum magellanicum, Sphagnum fuscum*, and *Sphagnum angustifolium*, and less commonly, *Sphagnum capillifolium, Sphagnum nemoreum*, and *Sphagnum girgensohnii*. Minerotrophic indicators, such as *Betula pumila, Carex stricta*, and *Carex aquatilis*, are absent (Sims *et al.* 1989, Minnesota NHP 1993, McCarthy *et al.* 1994, Harris *et al.* 1996).

CONSERVATION RANK G5.

DATABASE CODE CEGL002485

COMMENTS

Voyageurs National Park

Diagnostic features of the type are forested or woodland canopy of *Picea mariana* within a large peatland, often with a raised bog, and a species-poor understory. The woodland (25-60%) and forested (60-100%) phases can be distinguished through mapping, but appear to be the same type floristically. The type is analogous to Ontario's W26, which includes all treed bog stands with tree cover > 25% (Harris *et al.* 1996). In some cases, this community closely resembles more nutrient poor examples of the Black Spruce/Labrador Tea Poor Swamp. The Black Spruce/Labrador Tea Poor Swamp will generally contain more minerotrophic indicators than the Black Spruce Bog. Position on the landscape, however, is the best way to distinguish these types. The Black Spruce Bog is found only in the interior of large peatlands whereas the Black Spruce/Labrador Tea Poor Swamp is found in confined basins, shores, and the margins of large peatlands.

In the park and environs this community has been mapped only in the Rat Root Peatland and in a large peatland between Cranberry and Black Bays.

REFERENCES

Harris, A. G., S. C. McMurray, P. W. C. Uhlig, J. K. Jeglum, R. F. Foster, and G. D. Racey. 1996. Field guide to the wetland ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources, Northwest Science and Technology, Thunder Bay, Ontario. Field guide FG-01. 74 p.

Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation: A key to natural communities. Ver. 1.5. Minn. Dep. Nat. Resour., Nat. Heritage Prog. St. Paul, Minn. 110 p.

Sims, R. A., W. D. Towill, K. A. Baldwin, and G. M. Wickware. 1989. Field guide to the forest ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources.